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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,517

04/05/2006

Kevin Blann

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05/02/2008

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EXAMINER

LU, C CAIXIA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,517	<b>Applicant(s)</b> BLANN ET AL.	
	<b>Examiner</b> Caixia Lu	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25, 28, 29 and 33-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29 and 33-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The previous Nonfinal Office Action mailed on April 16, 2008 is withdrawn and replaced with the following. The previous Nonfinal Office Action is incomplete and sent out by inadvertent error.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 27, 2008 has been entered.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 29 and 33-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 29, atoms such as oxygen, sulphur and selenium can not be trivalent as required by atoms "A" and "C" in the formula of  $(R^1)(R^2)A-B-C(R^3)(R^4)$ , which renders the instant claims indefinite.

***Claim Rejections - 35 USC § 102***

5. Claims 29, 33-37, 40, and 42-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Wass (WO 01/10876 A1, and its family, US 6,800,702, is referred to hereinafter for convenience).

Wass' catalyst composition disclosed in col. 3, line 9 to col. 5, line 65 anticipate the instant claims.

***Allowable Subject Matter***

6. Claims 1-25 and 28 are allowed.

Claims 1-25 and 28 are directed to a tetramerization process in the presence of a catalyst composition comprising a transition metal compound such as chromium compound, heteroatom containing ligand compound, and organoaluminum activator selected from  $AlR_3$  wherein R is alkyl or a halide, or aluminoxane. Sato et al. (JP 07215896) discloses a trimerization and tetramerization process of ethylene in the presence of a catalyst composition comprising a chromium compound, a heteroatom containing electron donor (equivalent to the heteroatom containing ligand compound of the instant claims), and an aluminum alkoxide activator. Since Sato does not teach or reasonably suggest the organoaluminum activator of the instant claims, the instant claims are deemed to be novel over Sato.

7. Claims 38, 39 and 41 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The transition metal compound the catalyst composition disclosed Wass (WO 01/10876 A1) is limited to Group VIII compound. Wass not teaches or reasonably suggests the transition metal compound to be a Group IVB-VIB compound.

***Response to Arguments***

8. Applicant's arguments filed January 28 have been fully considered. Applicants have further limited the linking group "B" of the heteroatom containing ligand compound to be selected from a specific divalent groups which no longer include the linking group such as  $-\text{CH}_2\text{CH}_2\text{NHCH}_2\text{CH}_2-$  disclosed in Dixon et al. (US 2005/0119516). Therefore, the rejections under 35 USC 102(e) of the previous Final Office Action filed September 27, 2007 is withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

/Caixia Lu/

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Art Unit: 1796

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Caixia Lu, Ph. D.  
Primary Examiner